

# XAP120J 型沥青混合料搅拌设备 XAP120J Asphalt Mixing Plant

# 技术规格书

**Technical Manual** 

徐工集团工程机械股份有限公司道路机械事业部
ROAD MACHINERY BUSINESS UNIT
XCMG CONSTRUCTION MACHINERY CO., LTD.

### XAP120J 型沥青混合料搅拌设备

XAP120J Asphalt Mixing Plant

#### 技 术 规 格 书

**Technical Manual** 

#### 一、 整机主要技术规格

#### Main technical specifications

额定生产率为 120t/h

Rated productivity is 120t/h

#### 与生产能力有关的条件:

#### Conditions relating to plant capacity

1、 拌缸每拌 1500~1,750kg, 称量拌和周期为 45~55s;

Mixer capacity of 1500~1,750kg per batch

Weighing and mixing cycle for 45∼55s

2、 成品混合料为 JTG F40-2004《公路沥青路面施工技术规范》 规定的密级配中粒式沥青混合料,沥青含量 $\leq$ 5%,填料含量 $\leq$ 5%;

Mixed material is dense-graded Medium-grained asphalt mixtures proportioned to JTG F40-2004 《 Technical Specifications for Construction of Highway Asphalt Pavements》, bitumen content ≤ 5%, filler content ≤ 5%

- 3、 原材料符合 JTG F40-2004《公路沥青路面施工技术规范》要求:
  - 骨料平均含水量≤5%(平均含水量只是指材料表面的含水量,材料内部的含水量将会降低干燥筒的生产能力);骨料的密度为 1,600kg/m³;
  - 骨料中:

骨料规格 0~32mm; 0~2mm 粒径的材料 ≤35%;

0~0.09mm 粒径的材料 不超过细骨料总量的 10%;

● 矿粉的密度为 1,120kg/m³;

The aggregates feed into the plant should be comply with JTG F40-2004 «Technical Specifications for Construction of Highway Asphalt Pavements»:

Average moisture content of aggregate ≤5 %( The average moisture content is for surface only; and material internal moisture can reduce production capacity of the dryer); aggregate material density: 1600kg/m³;

Aggregate:

Aggregate size 0~32mm;

Particle size in the range of 0 to 2mm ≤35%

Particle size in the range of 0 to 0.09mm do not exceed 10% of the total fine aggregate

Mineral powder density is 1,120kg/m<sup>3</sup>

4、燃料:满足《油品规格报告》要求;

Fuel: To meet the requirements of « Oil Specification Report»

5、干燥滚筒出料端骨料温度 160℃;

Aggregate temperature of discharge end of drying drum is160°C

6、空气湿度≤90%;

Air humidity≤90%;

7、环境温度: 20℃;

Amient temperature taken as 20°C;

8、海拔高度≤400m。

Altitude 400m above sea level.

#### 二、分系统主要技术参数

The main technical parameters of the subsystems

#### 1.冷料供给系统

#### Cold feed system

1.1 冷料斗: 4×7m³,独立支撑结构,可再增加料斗

装载高度: 2.8m

装载宽度: 3m

过滤网:每个料斗配有防大料的过滤网

振动器: 1个砂料斗配有振动器,

Hopper:  $4 \times 7m^3$ , each hopper with individual supporting structure for ease of adding

further hoppers at a later date.

Loading height: 2.8m

Loading width: 3m

Filter: Each of the hoppers is equipped with filter.

Hopper vibrator: Fitted, to sand hoper.

1.2 配料机: 4×1.1kW, 变频调速

配料能力: 100t/h

调节比: 20: 1

皮带: 500mm 宽

Belt feeder: 4×1.1Kw, Four variable speed.

Metering capacity: 100t/h

Turndown range: 20: 1

Belt width: 500mm

1.3 集料皮带输送机:

输送能力: 140t/h

皮带: 500mm 宽

动力: 4kW

Collecting conveyor:

Conveying capacity: 140t/h

Belt width: 500mm

Drive: 4kW

1.4 倾斜皮带输送机:

输送能力: 140t/h

皮带: 500mm 宽

动力: 4kW

Transferring conveyor:

Conveying capacity: 140t/h

Belt width: 500mm

Drive: 4kW

#### 2 干燥系统

#### **Drying system**

2.1 干燥滚筒:

干燥能力: 140t/h (骨料 5%含水量时)

尺寸: φ1.8m×7.7m

传动方式: 四轮摩擦驱动, 运转平稳

动力: 4×11kW

保温: 矿棉保温外敷不锈钢

Drying drum:

Capacity: 140t/h (moisture content of aggregate is 5%)

Size:  $\phi$ 1.8m×7.7m

Driving mode: Fricion drive with four carrier rollers, smooth running

Drive: 4×11kW

Insulation: Insulation with rock wool and stainless steel cover

2.2 主燃烧器: 国内知名品牌、高效率机械压力雾化燃烧器

输出功率: 11.7MW

调节比: 1: 4

燃料: 柴油、重油

鼓风机功率: 45kW

温度控制: 点火、熄火、温度调节可进行手动/半自动化控制; 干燥滚筒卸料槽装有温度传感

器,连续监测出料温度,通过燃烧器操作台手动控制和调节燃烧器的火焰大小,确保出料温度的稳 定

Burner: domestic famous brand. High efficiency Pressure mechanical type burner

Output power: 11.7MW

Regulation range: 1: 4 Fuel: Diesel oil, heavy oil

Blower motor: 45kW

Control: Ignition, extinction, temperature actuator can be controlled by manual / semi-automatic; Temperature sensor in discharging trough of drying drum can continuous monitoring of discharge temperature, then to ensure the discharge temperature stability by the burner operation manual control and adjust the size of the burner flame.

2.2.1 燃油供给系统

柴油罐: 20,000L

Fuel supply system

Diesel oil bin: 20,000L

3 搅拌楼

搅拌楼:积木式模块结构,层间用定位销联接,螺栓加固

检修平台: 主通道宽度 600mm

卸料高度: 3.8m

Mixing tower

Mixing tower: modular construction tower, connected by a positioning pin between the

layers with retaining bolt.

Repair Platform: the main channel width is 600mm

Clearance height: 3.8m

3.1 热料提升机:单排板链料斗型,全封闭

提升能力: 140t/h

动力: 15kW, 带逆止装置

Hot elevator: single chain bucket elevator, fully enclosed housing

Capacity: 140t/h

Drive: 15kW, with Non-return device

3.2 振动筛: 全封闭、单轴式

筛分能力: 130t/h

动力: 11kW

骨料种类: 4种

筛分面积: 15.3m<sup>2</sup>

Vibraing screen: fully enclosed housing, single shaft

Capacity: 130t/h

Drive: 11kW

Screen grade: 4

Screen area: 15.3m<sup>2</sup>

3.3 热骨料仓: 4仓位

料仓容积:

$$1\#$$
—9.93 m³  $2\#$ —4.16 m³  $3\#$ —4.11 m³  $4\#$ —4.71 m³

总计 23 m<sup>3</sup>

保温: 矿棉保温, 外包镀锌钢板

温度检测: 砂料仓装有温度传感器

料位器: 高、低料位检测

取样口:每仓均设置手动取样口

卸料方式:气缸控制,每个仓位1只

Hot stone storage: four compartment

Material hopper volume:

$$1\#$$
——9.93 m³  $2\#$ ——4.16 m³  $3\#$ ——4.11 m³  $4\#$ ——4.71 m³ Total  $23 \text{ m}^3$ 

Insulation: Insulation with rock wool and galvanized sheet steel cover

Temperature sensor: sand aggregate storage has temperature sensor

Level indicators: High, low material level detection

Sampling chute: Each bin is arranged manual sampling

Outlet doors: Pneumatically operated, one per compartment.

3.4 骨料计量: "累积式"增量计量

骨料称量斗: 4点悬挂, 称量能力 1500kg

静态计量精度: ≤±0.5%

卸料方式: 气缸驱动两只半旋门顺轴卸入

Aggregate scale: "Cumulative" reduction scale

Aggregate weighing hopper: 1500kg capacity, four load cell mounted

Static accuracy: ≤±0.5%

Hopper door: Semi-rotary, pneumatically operated.

3.5 粉料计量: "累积式" 增量计量

石粉称量斗: 3点悬挂, 称量能力 300kg

静态计量精度: ≤±0.3%

卸料方式: 启动气动蝶阀卸入螺旋输送器后输送至搅拌器

Filler scale: "Cumulative" reduction scale

Filler weigh hopper: 300kg capacity, three load cell mounted

Static accuracy: ≤±0.3%

Discharge mode: Start the Pneumatic butterfly valve unloading the screw conveyor

conveying to the mixer

3.6 沥青计量: 增量计量

沥青称量桶: 3点悬挂, 称量能力 300kg, 电加热, 矿棉保温

静态计量精度: ≤±0.2%

卸料方式: 强制式喷洒

Bitumen scale: Reduction scale

Bitumen weigh hopper: 300kg capacity, three load cell mounted, electric heating, insulation

with rock wool

Static accuracy: ≤±0.2%

Discharge mode: Bitumen injected into mixer via a pump.

3.7 搅拌器:双卧轴强制搅拌式

搅拌能力: 1,750kg/批

动力: 2×22kW

卸料门:旋转门,双气缸控制,装有耐磨衬板

接口: 拌缸预留 SMA 添加口、再生料添加口等

Mixer: twin shaft compulsory mixer

Capacity: 1,750kg per batch

Drive: 2×22kW

Discharge door: Semi-rotary actuated by two pneumatic cylinders. Wear resistant liners

bolted to door.

Interface: The mixer reserve SMA and RAP adding hole etc.

#### 4 粉料供给系统

#### Filler system

4.1 粉料仓: 两仓位, 与搅拌楼组合成一体

储存能力: 9m3(矿粉仓) + 9m3(回收粉仓)

矿粉上料方式: 气力输送

料位器:每只粉仓均装有高、低料位仪

破拱装置: 在各粉仓锥体处均装有破拱助流气嘴

螺旋输送机:将矿粉和回收粉输送到石粉称量斗

Filler silo: Twin compartment, integrated with the mixing tower

Capacity: 9m³ (imported filler silo) and 9m³ (reclaimed filler silo)

Imported filler loading way: Pneumatic conveying

Level indicators: Each Filler silo with high, low material level detection

Arch breaking unit: Arch breaking flow cocks are provided in each silo cone.

Screw conveyer: imported filler and reclaimed filler are transported to filler weigh hopper

4.2 回收粉提升机: 单排板链料斗型, 全封闭

提升能力: 20t/h

驱动功率: 5.5kW, 带逆止装置

Own filler elevator: single chain bucket hopper type, fully enclosed

Capacity: 20t/h

Drive: 5.5kW with Non-return device

#### 5 沥青供给系统

#### Bitumen supply system

5.1 导热油炉: 300,000 kcal/h

燃烧器:两段火进口燃烧器,自动点火

燃料: 0#轻柴油

控制系统: 测量温度、压力、液位各参数, 自动控制加热炉在设定温度范围内工作

附件: 膨胀油箱,带有低位切断装置,加热腔室有保温层

Thermal oil heater: 300,000 kcal/h

Burner: Two stages, automatic ignition

Fuel: 0# light diesel oil

Control system: parameters measurement of temperature, pressure, liquid level, Automatic control of heating furnace work in the set range of temperature

Accessories: Expansion tank with low shutdown device and the heating chamber with insulation layer

5.2 沥青油罐: 2×30,000L, 导热油加热

保温: 矿棉保温

附件:液位计、温度计、加油管等

Asphalt tank: 2×30,000L, thermal oil heating

Insulation: Insulation with rock wool

Accessories: Contents gauge, thermometer and fill pipe 5.3 沥青输送泵: 7.5kW,双向旋转,实现沥青的输送和循环

Asphalt pump: 7.5kW, bilateral rotation bring about transporting and recycling of asphalt 5.4 沥青卸油系统: 导热油加热,在线操作,多罐注入

注入能力: 25.7m³/h

缓冲容量: 3m3

Asphalt unloading system: thermal oil heating, on-line operation Multiple tank injection Inject ability: 25.7m<sup>3</sup>/h

Buffer capacity: 3m<sup>3</sup>

#### 6 气动系统

#### Pneumatic system

主楼空压机: 1.5m³/min; 11kW; 7bar

附件: 气动元件, 电磁阀, 尼龙管道和管接头等

除尘空压机: 1.5m3/min; 11kW; 7bar

附件: 气动元件, 电磁阀, 尼龙管道和管接头等

Main plant compressor: 1.5m³/min; 11kW; 7bar

Accessories: emetic components, magnetic valve, nylon tube and joint series etc

dust collection compressor: 1.5m3/min; 11kW; 7bar

Accessories: emetic components, magnetic valve, nylon tube and joint series etc

#### 7 除尘系统

#### **Dust collection system**

除尘能力: 43,000 m³/h

除尘形式:一级惯性式除尘器+二级布袋式除尘器

Dust collection capacity: 43,000 m<sup>3</sup>/h

Dust forms: primary inertia filter and secondary bag filter

7.1 惯性式除尘器:分离粉尘粒径≥0.075mm,大颗粒粉尘经重力阀由螺旋输送机输送到热料提升 机回收利用大

Inertia filter: Separation of dust particle size≥0.075mm, Large particles of dust are conveyed to the hot elevator through the gravity valve by screw with large recycling

7.2 布袋式除尘器: 脉冲喷吹式

布袋材料: 美塔斯 500g/m<sup>2</sup>

连续使用耐温: 200℃

短时最高耐温: 230℃

布袋面积: 480m²

除尘效果: 低于 20mg/Nm³(水洗料)

清灰方式: 电磁脉冲阀控制, 按组定时进行喷吹

灰尘输送: 收集到的灰尘, 通过螺旋输送机和粉料提升机送到回收粉仓

保温: 50mm 厚的矿棉和瓦棱型的外壳

Bag filter: Pulse blow out

Filter medium: METAMAX, 500g/m<sup>2</sup>
Max.continuous temperature: 200°C

Max.peak temperature: 230°C

Bag area: 480m<sup>2</sup>

Deducting ability: less than 20mg/Nm<sup>3</sup> (Washing material)

Cleaning methods: by controlling method of the electromagnetic valve to blow out at a specific time

Dust conveying: Dust collected is conveyed reclaimed filler silo by screw conveyor and filler elevator

Insulation: 50mm thick rock wool with corrugated shell

7.4.1 引风机: 离心式

动力: 90kW

调节方式:旋转式风门调节,控制系统根据干燥滚筒负压驱动电动执行器,控制风门开度烟囱:高 12m,带有排水装置和尾气检测孔。

Exhaust fan: centrifugal

Drive: 90kW

Regulation: Rotary Adjusting door, Control system drives electric actuator o control valve opening according to the drying drum pressure.

Exhaust stack: 12m, with a drainage device and a tail gas detection hole.

#### 8 底置式成品料仓

#### Integrated mixed material storage system

成品料仓下卡车通道: 6.5m(宽)×3.8m(高)

储存能力: 34m³

输送能力: 140t/h

Clearance width and height: 6.5m (wide) x 3.8m (high)

Storage capacity: 34m<sup>3</sup>

Conveying capacity: 140t/h

8.1 料仓: 2仓位方型料仓,整体式结构,布置于搅拌楼的下方

保温: 矿棉保温

料位器:每只料仓装有高位料位仪

加热: 在料仓的锥体部分和卸料门装有电热丝

Hot mix storage: Twin compartment, integral structure, arranged below mixing tower

Insulation: insulation with rock wool

Level indicators: each Filler silo with maximum level sensor

Heating: electric heating wires is provided in the cone part storehouse and discharging door

8.2 废料仓:储存能力 4m3,安装在两料仓之间,由气缸操纵卸料门

Reject batch hopper: 4m³ capacity, installed between material hoppers, discharge door manipulated by cylinder

8.3 输料小车: 自行式小车

动力: 1.5kW, 变频驱动, 电机制动, 独立冷却

Movable skip: self-propelled trolley

Drive: 1.5kW, frequency conversion control, Motor brake, Independent cooling

8.4 控制:由 PLC 可编程控制器控制,变频调速,小车的位置由装在各仓位置开关确定,左右分别设有极限位保护,采用电机制动器。

Control: *PLC* programmed control, frequency conversion; the car's position is determined by the position switch installed in the warehouse, respectively with the limit protection, using motor brake

#### 9 控制系统

#### Control system

型式: PC+PLC

通讯方式: 工业现场总线

控制方式: 手动、半自动和全自动

电源: 380V/220V (±5%), 50Hz, 3相4线

控制室面积: 10m²

Form: PC+PLC

Communication mode: the industrial field bus

Control mode: manual, semi-automatic and fully automatic

Source: 380V/220V (±5%), 50Hz, 3 phase 4 wire

Operator cabin area: 10m<sup>2</sup>

9.1 电机控制

控制方式: 电机专用断路器 (短路保护+过载保护)+接触器

操作方式: 鼠标操作、按钮操作

Motor control

Control technique: Special circuit breaker motor (Short circuit protection+ Overload protection)+ contactor

Mode of operation: Mouse operation, button operation

9.2 称量控制系统

称量控制:自动称量、实时飞料误差自动补偿、沥青超量保护、配方输入自动校验、数据实时打印及存储输出

Weighing control system

Weighing control: Automatic weighing, real - time last running error automation compensation, Asphalt overload protection, Formula input automatic check, Real-time data print and store the output

9.3 搅拌控制

控制方式: 计算机自动程序控制

操作方式: 手动 (键盘、按钮)、全自动

Mixing control

Control technique: Automatic program control

Mode of operation: manual (Keyboard, button) . Fully automatic

9.4 燃烧器控制

控制方式: PLC 程序控制、手/自动点火、运行、安全监控、故障自动保护

Burner control

Control technique: PLC program control、 Manual / automatic ignition、Function、Safety monitoring、Automatic fault protection

10 声明:

徐工道路机械事业部遵循可持续发展的原则,因此,我们保留在不预先通知的情况下,对产 品进行修改和改进的权力。

徐工道路机械事业部对本技术规格书所列内容拥有最终解释权.

Statements:

XCMG follows the principle of sustainable development. Therefore, we preserve the rights of modifying & improving product without beforehand information.

XCMG has final power of interpretation on this technical manual.

技术规格书附件一:

**Annexes 1of Technical Specification:** 

1. 集装箱运输、装出箱要求:

#### Containerization. Packing and unpacking requirements

1.1、集装箱要求:

集装箱型号: 40 尺高柜标准海运集装箱

集装箱数量: 16件。

Requirements:

Container type: 40 feet tall cabinet standard shipping container

Container numbers: 16

1.2、XAP120J 沥青混合料搅拌站装箱、出箱场地说明:

XAP120J Asphalt Mixing Plant packing box, site description:

1) 装箱、出箱场地具备吊装货物 20T 行车(第一选用)或 50T 汽车吊, 单集装箱出箱场地面积:长×宽:30×5(m)。

Packing, unpacking site with hoisting cargo 20T bridge crane (first selection) or 50T truck crane,

A single container unpacking area: Length \* width: 30×5 (m)

2) 装箱、出箱现场保障车辆进出顺利,以便出箱顺畅。

Packing, unpacking scene security vehicle import and smooth, to unpacking smooth

## 1.3、装箱、出箱所需人员说明

staff Packing and unpacking required explanation:

状态	所需人员	数量	
State	staff required	Qt <b>y</b>	
	装箱组织指挥人员 Packing organization Command staff	1	
装箱 Packing	叉车操作者 Forklift operator	1	
racking	行车或汽车吊操作者 Train or truck crane operator	1	
	装箱操作者	4(能爬高者 1~2 人)	
	Packing operator	(climber $1\sim2$ )	
	出箱组织指挥人员 Unpacking		
	organization Command staff	1	
出箱	叉车操作者	1	
Unpacking	Forklift operator		
Jan	行车或汽车吊操作者 Train or truck crane operator	1	
	出箱操作者 Unpacking operator	4 (能爬高者 1~2 人)(Climber	
	Stipusting operator	1~2)	

## 1.4、装箱、出箱所需设备及工具包说明

Equipments and Tools Packing and unpacking required explanation

状态 State	设备及工具包名称 Equipments and tools' name	规格或要求 Specifications or requirements	数量 Oty
装箱 Packing	行车 Bridge crane	10-20T	1
	叉车 Forklift	5T	1
	叉车 Forklift	3T	1
	长撬棍 Peavey	扁尖头 Flat tip	2
	梯子 Ladder	8m	1
	手钳 Pliers	8寸 8 Inch	2
	活扳手 Adjustable Wrenches	8-12 寸 8-12 Inch	2

出箱 Unpacking	行车(第一选用) Bridge Crane (first selection)	10-20T	1
	汽车吊 Mobile Crane	50T	1
	装载机 Loaders	5T	1
	叉车 Forklift	5T	1
	叉车 Forklift	3T	1
	长撬棍 <u>Peavey</u>	扁尖头 Flat tip	2
	梯子 Ladder	8m	1
	手钳 Pliers	8 寸 8 Inch	2
	活扳手 Adjustable Wrenches	8-12 寸 8-12 Inch	2

# 1.5、随机附带装箱明细资料及装出箱工装

Attached documents, including packing list data and fixture.

# 技术规格书附件二: 电器功率清单

## Annexes 2of Technical Specification: Electric Power List

(标配)

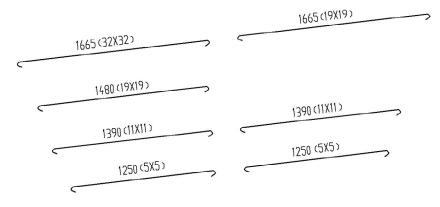
# (Standard)

序号 No.	名 称 Description	功 率(kW) Power (kW)	数量 Qty	总功率(kW) Total power	所属系统 System belong to
1	振动器 Hopper vibrator	0. 25	1	0.25	冷料供给系统
2	7.7	4	2	0	Cold feed system
2	减速电机	4	2	8	冷料供给系统
	Geared motor				Cold feed system
3	减速电机	1.1	4	4.4	冷料供给系统
	Geared motor		_		Cold feed system
4	减速电机	11	4	44	干燥滚筒总成
	Geared motor				Drying system
5	螺旋	3	2	6	除尘系统
	Screw				Dust collection system
6	螺旋	5.5	1	5.5	除尘系统
	Screw				Dust collection system
7	引风机	90	1	90	除尘系统
	Exhaust fan				Dust collection system
8	燃烧器	59.5	1	59.5	燃油供给及燃烧系统
	Burner				Fuel supply system
9	减速电机	22	2	44	称量搅拌系统
	Geared motor				Weighing and mixing
					system
10	沥青喷射泵	7.5	1	7.5	称量搅拌系统
	Asphalt ejector				Weighing and mixing
					system
11	沥青筒电加热丝	1	1	1	称量搅拌系统
	Asphalt barrel electric				Weighing and mixing
	heating wire				system
12	螺旋	4	1	4	 称量搅拌系统
	Screw				Weighing and mixing
					system
13	电机	15	1	15	
	Motor	-			Hot elevator
14	螺旋	4	2	8	热骨料仓
	Screw	•	_		Hot aggregate bin

15	振动筛电机	11	1	11	振动筛分系统
	Vibratory motor				Screening system
16	主楼空压机	11	1	11	主楼气路系统
	Main plant compressor				Main plan Pneumatic
					system
17	除尘空压机	11	1	11	主楼气路系统
	Dust plant				Main plan Pneumatic
	compressor				system
18	沥青循环泵	7.5	1	7.5	沥青供给系统
	Asphalt pump				Bitumen supply system
19	沥青卸油泵	7.5	1	7.5	沥青供给系统
	Asphalt unloading				Bitumen supply system
	pump				
20	导热油炉	9	1	9	导热油加热系统
	Thermal oil heater				Heat conducting oil
					heating system
21	粉提电机	5.5	1	5.5	粉料供给系统
	Filler elevator motor				Filler system
22	空调+灯	4	1	4	电器控制系统
	Air conditioner + Lamp				Control system
23	电机	1.5	1	1.5	底置式成品仓
	Motor				Based-Located type
					mixed material bin
24	成品仓电加热丝	1.5	2	3	底置式成品仓
	Mixed material				Based-Located type
	electric heating wire				mixed material bin
	总功率 (kW)			368	
	Total power				

技术规格书附件三: 筛网规格

Annexes 3of Technical Specification: screen panel specifications



筛网宽度尺寸 1514, 网孔大小可根据用户要求调整。

筛网规格: 32、19、11、5

Screen width: 1514, Mesh size can be adjusted according to user requirements screen panel specifications: 32、19、11、5

技术规格书附件四:整体平面图

Annexes 4 of Technical Specification: Overall plan

